ABSTRACT OF THE DISCLOSURE

A distortion compensating apparatus for compensating for a distortion of a transmission power amplifier. A delay time decision unit calculates the correlation between a transmission signal and a feedback signal fed back from the output side of the transmission power amplifier while varying phase difference between both signals, and decides the total delay time caused in the transmission power amplifier and a feedback loop on the basis of the phase difference in which the correlation is the maximum. A delay unit delays the transmission signal before a distortion compensation processing by the total delay time, and inputs the delayed signal into a distortion compensating apparatus arithmetic unit, which calculates and stores a distortion compensation coefficient on the basis of the transmission signal and the feedback signal fed back from the output side of the transmission power amplifier. A pre·distortion unit applies a distortion compensation processing to the transmission signal by using the distortion compensation coefficient.